

CHAPTER 2

Principles of Airdrop Supply and Resupply Operations

INTRODUCTION

Airdrop resupply is normally used to deliver supplies and equipment to combat, combat support, or combat service support units when no other delivery method is possible. It provides a critical link in the transportation system. Most airdrop resupply missions are conducted for units in the divisional area or forward of the FLOT for deployed SOF (Rangers, SF) elements. However, situations could arise that would require airdrop resupply in the corps area or in the COMMZ. Airdrop support units can support airdrop missions flown at various airdrop altitudes. Current threat capabilities dictate that airdrop resupply missions should normally be flown at low altitudes (about 300 feet above ground level) and at airspeeds up to 250 knots. The advantages and disadvantages of the various types and methods of airdrop need to be considered when planning airdrop resupply operations.

STAGES OF SUPPLY

Supply in airdrop operations can be classified into three stages. These stages are accompanying, follow-up, and routine.

Accompanying

In the accompanying stage, supplies are taken into an airhead by the assault force. Each unit prepares its own accompanying supplies to support the tactical plan. Accompanying supplies are usually basic loads and selected supplies from supply Classes I, II, III, IV, V, VII, VIII, and IX. As a rule, accompanying supplies will support the assault force from two-to five days, or until the follow-up supply flow can be established.

Follow-Up

At the follow-up stage, supplies are airdropped to units until routine resupply operations can be set up. There are three types of follow-up supply—automatic, on-call, and emergency (SF only).

Automatic. This is a scheduled method of providing airdrop resupply to the assault force. The force commander, along with his logistics staff

elements, estimates the quantities of supplies that will be consumed each day. He then computes the quantities needed to build up the reserve requirement. The automatic resupply plan is developed from these estimates. Items are rigged by an airdrop support unit and stored at the airdrop unit or departure airfield until the delivery date.

On-call. This method is similar to automatic resupply. Logistics planners determine in advance the supplies that may be required, depending on the situation. These supplies are then delivered to the airdrop support unit. They are then rigged for airdrop or held in bulk until needed. Since the supplies could be called for on short notice, it is preferable to rig them in advance. Assignment of load-unique numbers will facilitate the request procedures. Some of the light forces and SOF now have prerigged supplies held in the CONUS base for direct delivery to an operational area. These supplies have load-unique numbers that are known by the units authorized to request the supplies and the storage activity.

Emergency. This resupply method will be used to deliver mission-essential equipment and supplies needed to restore the operational capability and survivability of a Special Forces element and its indigenous force. Preplanned like an automatic resupply, an emergency resupply is delivered when—

- Radio contact has not been established between the deployed Special Forces element and its higher headquarters within a predesignated time after infiltration.

- The deployed Special Forces element fails to make a predetermined consecutive number of scheduled radio contacts.

Routine

The routine supply stage is established as quickly as the situation permits. Routine supplies are delivered as a result of normal requisitioning and issue procedures. They are used to replace supplies that have been expended or to establish reserve stocks.

TYPES AND METHODS OF AIRDROP

A knowledge of the types and methods of airdrop is important to the users, operations planners, and logistics planners involved in developing airdrop requests and equipment stockage requirements. However, the main concern of the unit requesting a mission is that the requested supplies arrive at the time and place required in a usable condition.

Types of Airdrop

Airdrop resupply is classified into four types (Figure 2-1, page 2-3). These are described in more detail below.

Free-drop. This type of airdrop is used infrequently, especially when airdrop equipment is readily available. Parachutes or other devices to slow the rate of descent of the supplies are not used. Some type of energy-dissipating material, such as honeycomb, may be placed around the supplies to lessen the shock when the load hits the ground. The load descends at a rate of 130 to 150 feet per second. Baled clothing and fortification and barrier materials are examples of nonfragile items that can be free-dropped successfully.

High-velocity. This type of airdrop was used extensively during the Vietnam period. Aircraft flying at higher altitudes were not as vulnerable to the unsophisticated air defense systems being used in South Vietnam. High-velocity airdrop uses a small parachute that generates enough drag to hold the load in an upright position during its descent at 70 to 90 feet per second. Items are placed on energy-dissipating material and rigged in an airdrop container. Subsistence items, packaged POL products, ammunition, and similar items may be delivered by this type of airdrop.

Low-velocity. Low-velocity airdrop can be used for all supplies and equipment certified for airdrop. Cargo parachutes reduce the rate of descent to no more than 28 feet per second. Depending on the weight of the load, one to eight parachutes are used. Items are rigged on an airdrop platform or in airdrop containers. Energy-dissipating material is placed under the supplies or equipment to reduce the shock when the load hits the ground. Fragile materiel, vehicles, bridging, and artillery may be airdropped by low-velocity techniques.

Low-altitude parachute extraction. LAPE airdrop is used to airdrop supplies and equipment from an aircraft flying about 5 to 10 feet above the ground. The load is rigged on a specially configured airdrop platform. Energy-dissipating material is placed under the load to reduce the shock when the load hits the ground. As the aircraft flies across the drop area, the load is extracted using one to three LAPE parachutes. The load falls at about 28 feet per second and slides across the extraction zone. The LAPE parachutes keep the load aligned with the extraction zone, prevent tumbling, and help slow the forward momentum. LAPE airdrop requires a relatively flat, smooth area requiring special preparations before it can be used. Almost every item that can be delivered by low-velocity airdrop can be delivered using LAPE airdrop.

Other types of airdrop. Systems have been developed that combine the various types of airdrop. One such system allows the release of an airdrop bundle from a very high altitude. The bundle is initially slowed by a high-velocity parachute, falling about 90 feet per second. The high-velocity parachute keeps the load stabilized and in proper position during its initial stage. The load is rigged with a barometric device that activates at a predetermined altitude. When this occurs, a low-velocity parachute deploys. The parachute slows the rate of descent of the airdropped item to 28 feet per second or less before ground impact. This system and other similar systems are used mainly in support of SOF.

Methods of Airdrop

There are three primary and three secondary methods for releasing loads from an aircraft. These primary (extraction, door load, and gravity) and secondary methods are described below.

Extraction. The load, rigged on an airdrop platform, is pulled from the aircraft cargo compartment by an extraction parachute or a LAPE parachute. This method is used for all low-velocity and LAPE platform airdrops.

Door load. A small bundle is pushed or skidded out the paratroop doors. This method is used mainly for accompanying supplies and equipment during an airborne troop drop.

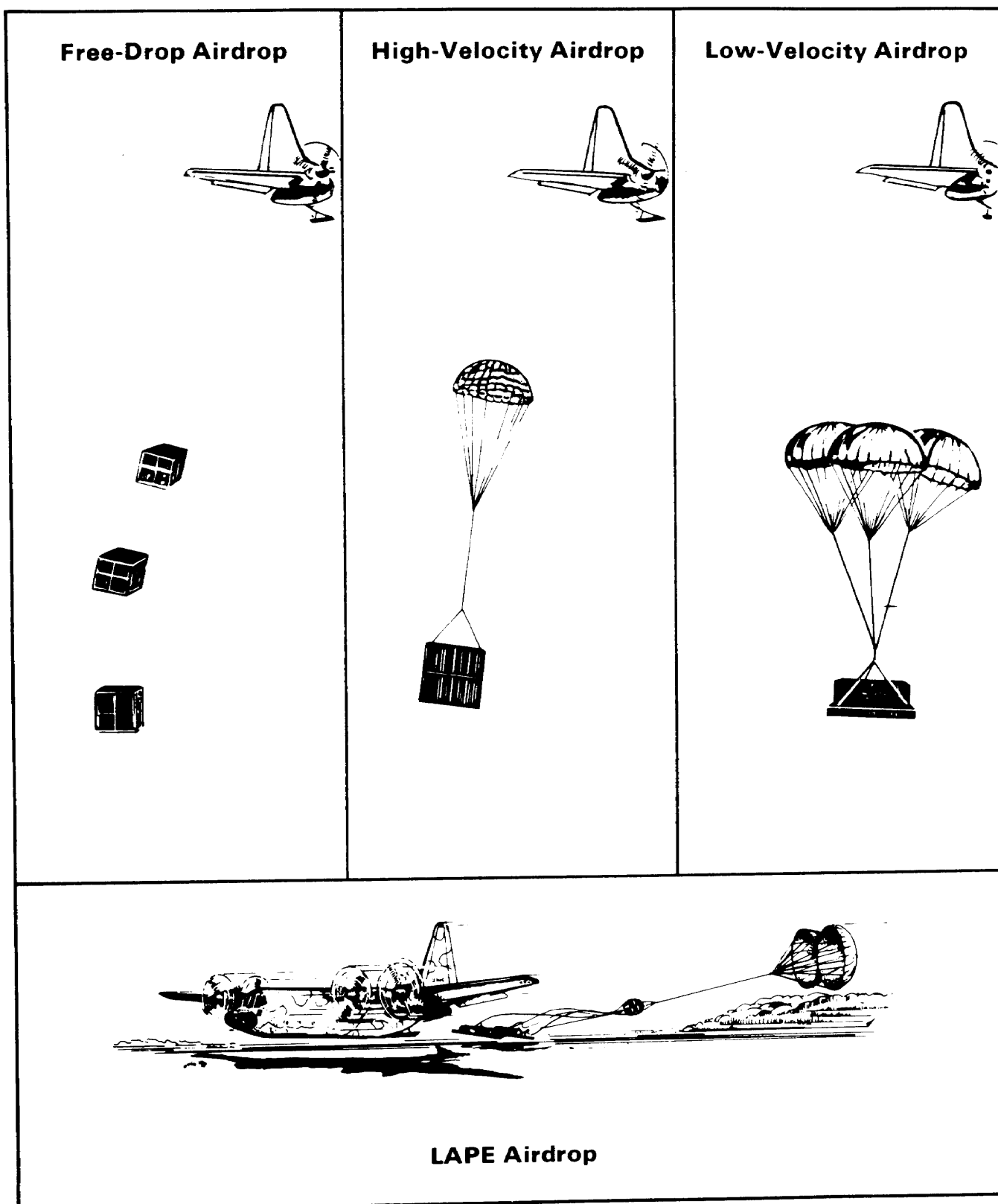


Figure 2-1. Types of airdrop

Gravity. Just before the drop, the aircraft is flown in a nose-up attitude. The bundles are restrained in the aircraft by a release gate of nylon webbing. When this is cut, they simply roll out of the aircraft. The main parachute, either high-velocity or low-velocity, is activated by a static line connected to the inside of the aircraft. This method is used for containers being delivered using both high-velocity and low-velocity techniques.

Secondary methods of airdrop. There are three secondary methods of airdrop. One method is to release a bundle from the cargo hook of a helicopter. The other two are used by SOF. In one of these methods, a bungee cord system is used as an aid to the gravity method. This system allows the airdrop of small bundles from a relatively low-flying, high-speed aircraft. The second SOF method releases a bundle shaped like a bomb from beneath the wing of certain jet (tactical) aircraft.

ADVANTAGES OF AIRDROP RESUPPLY OPERATIONS

Airdrop may offer several advantages over other methods of delivering supplies and equipment. The primary advantage is that it can be used when no other means is available for transporting needed supplies or equipment. Other advantages include the following:

- Airdrop results in less handling of supplies and shorter shipping times. Supplies can be delivered in one lift direct from the corps area or the COMMZ to the requesting unit near the FLOT. In contingency operations where stocks have been established and prerigged, supplies can be throughput directly from CONUS.

- Flying time and aircraft exposure are reduced in comparison to airland operations.
- The need for forward airfields is reduced.
- The need for ground handling equipment is minimized. This reduces congestion in airfield off-loading areas.
- Greater dispersion of ground tactical forces is permitted.
- Aircraft availability is improved compared to airland operations.

DISADVANTAGES OF AIRDROP RESUPPLY OPERATIONS

Airdrop resupply operations provide flexibility to the supply and distribution systems. Even so, there are some disadvantages that the staff planner must consider. The major disadvantage is the vulnerability of delivery aircraft to enemy air defense systems. Some airdrop aircraft fill both a tactical and a strategic logistic role. Loss of these aircraft could have a major impact on the tactical and logistic strategic lift capability. Other disadvantages include the following:

- Special airdrop equipment, being relatively heavy, reduces the amount of supplies or equipment that can be transported.
- Specially trained rigging personnel and aircraft crews are required.
- Adverse weather conditions may affect delivery accuracy.
- Drop zones must be secured to keep supplies from falling into enemy hands.
- LAPE zones normally require some special preparation.